

In the United States Patent and Trademark Office

Appellants:	William G. Reeves et al.	Docket No.:	17,988
Serial No.:	10/734,005	Group:	1792
Confirmation No:	9405	Examiner:	Lightfoot, Elena Tsoy
Filed:	December 10, 2003	Date:	March 30, 2010
For:	METHODS OF PREPARING SURFACE CROSSLINKED SUPERABSORBENT-CONTAINING COMPOSITES		

Brief on Appeal to the Board of Patent Appeals and Interferences

Mail Stop Appeal Brief - Patents
Commissioner For Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to 37 C.F.R. 41.37 Appellants respectfully submit this Brief in support of their Appeal of Examiner Lightfoot's **Final Rejection** of claims 12, 14, 15 and 23 which was mailed on October 30, 2009.

On February 1, 2010, Appellants, pursuant to 37 C.F.R. 41.31, faxed a timely Notice of Appeal which was received in the USPTO on February 1, 2010. Thus, this Appeal Brief is timely filed on March 30, 2010.

Real Party in Interest

The present Application has been assigned to Kimberly-Clark Worldwide, Inc., which is the real party in interest.

Related Appeals and Interferences

To the knowledge of Appellants, Appellants' legal representative, or assignee, there are no other known related appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

Status of Claims

Claims 12, 14, 15 and 23 are currently pending in the application and have been finally rejected. The claims on appeal are identified as claims 12, 14, 15 and 23. Claims 1-11, 13, 16-22 were previously canceled. The appealed claims are recited in the Claims Appendix of this Brief.

Status of Amendments

No amendments were filed subsequent to the Final Rejection mailed on October 30, 2009.

Summary of Claimed Subject Matter

The following summary correlates claim elements to specific embodiments described in the application specification, but does not in any manner limit claim interpretation. Rather, the following summary is provided only to facilitate the Board's understanding.

The subject matter of independent claim 12 is directed to a method of preparing a surface crosslinked superabsorbent-containing composite. The method comprises introducing particles of coating material into a flowing gas stream. (See e.g., page 2 lines 18-19). The particles of coating material are cellulosic materials and the cellulosic materials are solid particles, porous particles, or an agglomeration of particles. (See e.g., page 5 lines 4-30). In addition, the cellulosic particles of coating material are granules, pulverulents, powders, or spheres. (See e.g., page 3 lines 7-8). The method further comprises introducing at least one particle of at least one superabsorbent material into the flowing gas stream. (See e.g., page 2 lines 24-26). The flowing gas stream moves the superabsorbent material and the coating material through a zone where an association agent and a crosslinking reagent are applied to the superabsorbent material and the coating material. (See e.g., page 2 lines 27-29). The association agent is selected from the group consisting of water, volatile organic solvent, aqueous solution of film-forming material, synthetic adhesive and mixtures thereof. (See e.g., page 7 lines 21-24). In addition, the crosslinking reagent is selected from the group consisting of ethyleneglycol diglycidyl ether, aluminum acetate, aluminum sulfate, glycerol, ethylene carbonate, quaternary amine, glycidyl compound, alkylene carbonates, silyl esters, tetramethoxy silane, and mixtures thereof. (See e.g., page 8 lines 9-13). The method further comprises maintaining the superabsorbent material and the coating material in the flowing gas stream until the superabsorbent material is covered with at least a first layer

of the coating material (See e.g., page 2 lines 29-30).

Grounds of Rejection to be Reviewed on Appeal

Ground 1

Claims 12, 14, 15, and 23 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,376,011 to Reeves et al. (hereinafter “Reeves”) as applied in the previous Office Action and further in view of U.S. Patent No. 5,807,364 to Hansen (hereinafter “Hansen”)

Argument

Claims 12, 14, 15, and 23 are not obvious over Reeves in view of Hansen.

In order to establish a *prima facie* case of obviousness, three basic criteria must be met: (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings; (2) there must be a reasonable expectation of success; and (3) the prior art reference (or references when combined) must teach or suggest all the claim limitations. MPEP §2143. The application of the “teaching, suggestion, or motivation” (TSM) test is not “rigid.” However, “there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness” *KSR Int’l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 82 USPQ2d 1385, 1396 (2007) (quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006)) (emphasis added).

Appellants’ claims 12, 14, 15 and 23 generally require the steps of introducing a coating material and introducing a superabsorbent material into a flowing gas stream, then moving the coating material and superabsorbent material through a zone where:

- 1) an association agent, and
- 2) a separate crosslinking reagent

are applied to the superabsorbent material and the coating material. The association agent is specifically selected from: water, volatile organic solvent, aqueous solution of film-forming material, synthetic adhesive and mixtures thereof. The crosslinking reagent is specifically selected from: ethyleneglycol diglycidyl ether, aluminum acetate, aluminum sulfate, glycerol, ethylene carbonate, quaternary amine, glycidyl compound, alkylene carbonates, silyl esters, tetramethoxy silane, and mixtures thereof.

The Examiner states that "Reeves et al teaches that a mixture of water and a *synthetic adhesive* such as polyvinyl alcohol may be used as an association agent to achieve an intimate association (claimed crosslinking) of the coating material with the superabsorbent material via *mechanical and/or chemical bonding*," citing Reeves column 8 lines 34-60 and column 9 lines 11-17 for alleged support (Office Action dated October 30, 2009, page 2) (emphasis added by Examiner). Appellants respectfully disagree with the Examiner's position.

It appears that the Examiner is attempting to equate the ***association agent*** of the present application with the ***crosslinking reagent*** of the present application. However, this position is untenable. For example, as stated above, the Examiner alleges that a mixture of water and a synthetic adhesive may be used as an association agent, and then without explanation parenthetically alleges that said association agent achieves the claimed crosslinking (Office Action dated October 30, 2009, page 2). Appellants respectfully note that the term "association agent" is defined by Reeves as the liquid or semi-liquid that facilitates the adherence of the coating material of Reeves with the superabsorbent material of Reeves (see e.g., Reeves column 8 lines 31-57). In contrast to Reeves, the present application not only requires an association agent, but also requires a crosslinking reagent. As defined in the present application, the term "crosslinking reagent" refers to a material for rendering the coating material more resistant to compression, and that such crosslinking reagent typically results in stiffening of the coating material (e.g., Specification page 8 lines 2-6). As Appellants best understand it, Reeves makes no reference at all to the use of a separate crosslinking reagent, which is in addition to the association agent. Furthermore, Reeves specifically discloses that both synthetic adhesives and water are "association agents" (e.g., Reeves column 9 lines 8-17). The Examiner seems to acknowledge this deficiency in Reeves by stating that "Reeves et al fails to teach claimed crosslinking reagent for the use as a *synthetic adhesive*..." (Office Action dated October 30, 2009, page 3)(emphasis added by Examiner). Thus, the Examiner has failed to show that Reeves teaches or suggests each of the elements of claims 12, 14, 15 and 23.

In an attempt to remedy this acknowledged deficiency, the Examiner adds Hansen for the alleged purpose of teaching that "binders such as **protonated** primary, secondary or **tertiary** amines (claimed

quaternary amine) or deprotonated quaternary ammonium salts are suitable for binding superabsorbent particles to cellulose fibers..."(Office Action dated October 30, 2009, page 3) (emphasis added by Examiner). Thus, it appears that the Examiner is alleging that a protonated tertiary amine is the same as quaternary amine. However, the Examiner is incorrect, and has provided no evidence to support this position. In contrast, a quaternary amine is permanently charged and results in different pH values than a protonated tertiary amine, which involves acid dissociation relating to tertiary amines. For example, one patent application states the following:

[0049] With certain additives, such as iodine and iodophors, it is highly desirable to formulate a composition having a low pH, e.g., about 3 to about 5. Some conventional compositions attempt to use carboxylic acid functional polymers that may be protonated at these pH values and thus not ionized, however, these are not soluble. Unlike these materials, the polymers used in the compositions of the present invention rely upon amine groups which are permanently charged in the case of quaternary ammonium groups, protonated and thus cationic in the case of protonated tertiary amine groups, or nonionic and/or cationic in the case of amine oxide groups. For example, preferred amine oxide-containing polymers appear to be approximately 100% protonated and thus positively charged at a pH of about 4. The quaternary ammonium and amine oxide groups are believed to contribute to stability over a broad pH range, e.g., about 2 to about 12. The tertiary amine groups are believed to contribute to composition stability over a pH range of about 2 to about 9.

(U.S. Patent Publication 2005/0025794 to Wang et al.; *see also* U.S. Patent No. 4,301,312 to Feder et al. for a further discussion of the acid dissociation of a protonated tertiary amine and its relation to tertiary amines, not quaternary amines).¹ Therefore, the Examiner has not shown that the addition of Hansen overcomes the deficiency of Reeves.

In addition, even if *arguendo*, Hansen did disclose the tertiary amine crosslinking reagent (which Appellants deny), one of ordinary skill in the art would not make a combination that would add a crosslinking reagent to Reeves. In particular, Reeves is directed to forming an absorbent composite that can absorb viscoelastic complex fluids, such as menses. Since the crosslinking reagent has the effect of rendering the coating material more resistant to compression and stiffens the coating material, this would cause the invention of Reeves to be unsatisfactory for its intended purpose. According to MPEP § 2143.01(V), if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification (*In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984)). Thus, Reeves teaches away from the addition of crosslinking reagent.

¹It is also respectfully noted that a deprotonated quaternary ammonium salt is also not a quaternary amine.

For at least the reasons presented above, Appellants respectfully submit that the Examiner has failed to properly establish a *prima facie* case of obviousness, and this rejection of claims 12, 14, 15 and 23 under 35 U.S.C. 103(a) has been overcome. Appellants respectfully request that the Board **reverse** this rejection.

Conclusion

For the reasons set forth in the above arguments, it is respectfully submitted that the rejections should be **reversed**. It is also respectfully submitted that claims 12, 14, 15, and 23 are not obvious over Reeves in view of Hansen since they do not teach or suggest each and every element as found in Appellants' claimed invention, and also since Reeves teaches away from the addition of a cross-linking agent. Accordingly, it is respectfully submitted that claims 12, 14, 15 and 23 are in allowable condition.

Please charge the \$540.00 fee (fee code 1402), pursuant to 37 C.F.R. 41.20(b)(2), for filing this Appeal Brief to Kimberly Clark Worldwide, Inc. deposit account number 11-0875. Any additional prosecutorial fees which are due may also be charged to deposit account number 11-0875. If a fee is required for an extension of time under 37 C.F.R. 1.136 not accounted for above, such extension is requested and should also be charged to our Deposit Account 11-0875.

The undersigned may be reached at: (920) 721-4405

Respectfully submitted,

WILLIAM G. REEVES ET AL.

By /Bryan R. Rosiejka/
Bryan R. Rosiejka
Registration No.: 55,583

ELECTRONIC FILING CERTIFICATE

I hereby certify that this correspondence and all attachments and any fee(s) are being electronically transmitted via the internet to the United States Patent and Trademark Office using the Electronic Filing System on March 30, 2010.

/Bryan R. Rosiejka/

Signature

Bryan R. Rosiejka

Typed Name

Claims Appendix – Listing of the Claims On Appeal

The claims on appeal are:

12. A method of preparing a surface crosslinked superabsorbent-containing composite, the method comprising:

- (a) introducing particles of coating material into a flowing gas stream wherein the particles of coating material are cellulosic materials and the cellulosic materials are solid particles, porous particles, or an agglomeration of particles and wherein the cellulosic particles of coating material are granules, pulverulents, powders, or spheres;
- (b) introducing at least one particle of at least one superabsorbent material into the flowing gas stream, the flowing gas stream moving the superabsorbent material and the coating material through a zone where an association agent and a crosslinking reagent are applied to the superabsorbent material and the coating material wherein the association

agent is selected from the group consisting of water, volatile organic solvent, aqueous solution of film-forming material, synthetic adhesive and mixtures thereof and wherein the crosslinking reagent is selected from the group consisting of ethyleneglycol diglycidyl ether, aluminum acetate, aluminum sulfate, glycerol, ethylene carbonate, quaternary amine, glycidyl compound, alkylene carbonates, silyl esters, tetramethoxy silane, and mixtures thereof; and

- (c) maintaining the superabsorbent material and the coating material in the flowing gas stream until the superabsorbent material is covered with at least a first layer of the coating material.

14. The method of claim 12, wherein the flowing gas stream comprises air.

15. The method of claim 14, further comprising (d) heating the flowing gas stream to an elevated temperature sufficient to effect crosslinking on at least a portion of the surface of the superabsorbent-containing composite.

23. The method of claim 12, wherein the association agent and the crosslinking reagent are simultaneously applied.

Evidence Appendix

None

K-C Docket No.: 17,988
Serial No.: 10/734,005

Related Proceedings Appendix

None